
Marine Physical Laboratory

Support for FLIP/ORB

Fred H. Fisher

Final Report to the
Office of Naval Research
Contract N00014-89-D-0142 (DO#26)

MPL-U-18/95
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Support for FLIP/ORB

Fred H. Fisher
(Principal Investigator)

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for the Period 12-1-91 - 6-30-94**

Abstract

This project provided support for the operation, maintenance, and upgrade of the Research Platforms FLIP and ORB, both of which are operated by the Scripps Institution of Oceanography, University of California, San Diego. These platforms, owned by the U.S. Navy, are used principally in support of ASW research and development projects. Their stability characteristics, instrument deployment capabilities and mooring capabilities, make them unique platforms for obtaining ocean environmental data critical to the successful development of advanced ASW systems.

Research Summary

Research Platform FLIP

During this period FLIP was deployed at sea for ten different scientific operations and two training operations (3 days) for a total of 117 days at sea. These operations are summarized in Table 1. The cancellation of the ONT High Gain Initiative had a severe negative effect on FLIP scheduling which was to be the platform for experimental research involving deployment of multiple arrays for three-dimensional array processing of signals and ambient noise related to long range detection of submarines.

Regular maintenance drydockings have been conducted approximately on an annual basis for routine inspections and minor repairs as part of a fatigue monitoring program. The recent detailed inspection of the FLIP hull by DTRC/NAVSEA showed no fatigue effects on the cylindrical hull. With NAVSEA support, repairs on corroded and eroded internal structural elements were scheduled for early FY 95. With a heavy schedule for FY 95, metal for the ring frames, longitudinals and other repairs needed after 32 years was purchased in late FY 94 in advance of scheduled dry-docking in early FY 95 to minimize shipyard time.

During FY 92-93 period, a major modification of the present hull was studied on the basis of projected funding. Relatively minor alterations of the hull could increase payload capabilities, decrease heave response from around 10% to 5% of surface wave height, increase operational capabilities from 30 foot to 50 foot seas, and add an extra deck by moving main engines down to the conical transition section below the laboratory and living quarters (vertical position). This would have also improved several safety aspects of operations at sea. However, though estimated costs for this alteration of the structure were within a projected budget, they were beyond the funding that actually became available.

Research Platform ORB

Although inquiries for the use of ORB came in sporadically, there was no interest in paying for the repairs necessary for meeting standards of safety for operations at sea. The only use of ORB has been for dockside testing of experimental equipment for different groups at MPL. Dockside safety improvements were made to meet fire and other safety requirements pierside.

With NAVSEA and ONR approval, plans are underway to survey ORB from MPL/SIO after salvaging useful equipment. The former Officer-in-Charge of ORB has been transferred to the same position on FLIP over a year ago.

Personnel Changes

Captain William A. Gaines, USN (Ret.), as Assistant Director at MPL took over responsibility for FLIP and ORB from Dr. Fred Fisher, Acting Deputy Director, as of January 1993. He and Dr. William S. Hodgkiss became principal investigators in place of Dr. Fisher as of 1 April 1994, for the FLIP/ORB contract. Mr. Terry Hoopes succeeded Mr. Dewitt Efird as Officer-in-Charge of FLIP in December 1992.

TABLE 1. FLIP Cruise Summary 1 October 1991 - 31 March 1994

Year	FLIP Dates	Principal Investigator	Contract	Program	Cruise Name	Days
1991	15 Aug-15 Oct	Hildebrand		NOBS		
	28 Oct-6 Nov	Pinkel		Sonar Doppler Test		
1992	7-20 Jan	Dahl APL/UW		Scattering	Liska/C&G Block	41
	15-30 Sep	G. D'Spain		DIFAR		
1993	24-25 Mar	Fisher	N00014-89-D-0142-D26	crew training	Navajo	54
	29 Mar-2 Apr	Hildebrand	N00014-89-D-0142-D26	non-acoustics NSWC NRT	Navajo	5
	11-27 Aug	Hodgkiss/NRaD		SWell Ex 1 Shallow Water Point Loma	NRaD tests Joe Rice Sioux	17
	14-30 Sep	Hodgkiss/NRaD		SWell Ex 2 Shallow Water San Clemente Island	NRaD tests Mark Stevenson Navajo	17
	8-12 Nov	Worcester	MDA972-93-0003	ATOC Experiment	2 point moor/ SOCAL Navajo	5
1994	18 Jan-14 Feb	Gaines	MPL FF14	Dry Docking	Campbell Shipyard	28
	17 Mar	Gaines	MPL FF14	sea trials/training	SOCAL FOSS TUG	1
	20-27 Mar	Gregg APL/UW	MPL RP 67227 43A	MBL Equip test	SIOUX	8

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